

Serial No.: 10/596,118

Filing Date: 5/31/2006

Attorney Docket No. 515.040US01

Title: TEST APPARATUS FOR CONTROL UNIT, PATTERN SIGNAL CREATING
APPARATUS, AND TEST PROGRAM GENERATING APPARATUS

REMARKS

The Office Action mailed on June 7, 2010 has been reviewed. Claims 1-9 and 11-19 are canceled. Claims 10 and 20 are pending in this application.

Information Disclosure Statement

The Examiner indicated on page 7 of the Office Action that “the New IDS was not considered” since “1) the English translated version was not readily available at the time of the Office Action, and the English translated abstract did not have sufficient information to use against the claims.”

Applicant respectfully requests that the Examiner initial the IDS (PTO/SB/08a) indicating that this reference has been considered because the Applicant has complied with the requirements of Rule 1.97(a)(3). The MPEP provides:

Submission of an English language abstract of a reference may fulfill the requirement for a concise explanation.

MPEP 609.04(a) III. Applicant respectfully submits that the English language abstract was provided and thus the reference must be considered. Applicant respectfully requests that the initialed PTO/SB/08a be returned to Applicant with the next Action in this case. A courtesy copy of the PTO/SB/08a previously submitted has been included with this communication.

Rejections Under 35 U.S.C. § 103

Claims 10 and 20 were rejected under 35 USC § 103(a) as being unpatentable over Hoenninger, (U.S. Patent No. 5,490,065) (hereafter Hoenninger) in view of Chapman et al. (U.S. Patent No. 5,442,738) (hereafter Chapman). Applicant respectfully traverses this rejection.

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Claim 10 has been amended and now recites “the testing means continues testing the operation of the control unit based on one of the second pattern signal or the third pattern signal.” Similarly, claim 20 has been amended and now recites “continuing testing the operation of the control unit based on one of the second pattern signal or the third pattern signal.” Support for these limitations is found in at least step 416 of Figure 20, and page 18, lines 27-31.

Claim 10:

Neither Hoenninger nor Chapman discloses:

means for causing said testing means *during execution of a first pattern signal* to switch to the execution of a second pattern signal when a first pattern signal transition condition for making a transition to the execution of said second pattern signal holds as a result of the execution of the first pattern signal; and

means for causing said testing means *during execution of said first pattern signal* to switch to the execution of a third pattern signal when a second pattern signal transition condition for making a transition to the execution of said third pattern signal holds as a result of the execution of the first pattern signal, wherein the testing means continues testing the operation of the control unit based on one of the second pattern signal or the third pattern signal

as claimed in claim 10.

The Examiner alleges Hoenninger discloses “causing said testing means during execution of a first pattern signal to switch to the execution of a second pattern signal when a first pattern signal transition condition for making a transition to the execution of said second pattern signal holds as a result of the execution of the first pattern signal” at Col. 4, lines 28-35, which recite:

In the following program steps, 35 and 36, the test computer 8, using the simulation and measuring unit 11, applies square wave signals, with the frequencies and duty cycles predetermined for this particular test step, to specific control unit inputs, likewise predetermined for this test step. These signals are not limited to square wave signals. Other alternating signals, like sawtooth, or triangular shaped signals may be used also.

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At column 4, lines 20-25, Hoenninger discloses

...in step 34, the test program repeatedly interrogates or samples the ignition signal output line 17. If *the test program recognizes a falling edge signal* on the ignition signal output line 17, the test program *realizes that the input signals for this test step have been processed* by the control unit 10.

Hoenninger clearly discloses “test step 32...and the subsequent program step 33” (the alleged “execution of the first pattern”) “have been processed” (are *completed*) when the “test program recognizes a falling edge signal on the ignition signal output line 17” during step 34. Therefore, Hoenninger does not disclose “causing said testing means” to switch “to the execution of a second pattern signal” “*during execution of a first pattern signal*”, since the “test step 32...and the subsequent program step 33” are *completed* prior to execution of “program steps, 35 and 36”.

Additionally, Hoenninger does not disclose “the testing means continues testing the operation of the control unit based on one of the second pattern signal or the third pattern signal” as claimed in claim 10.

The Examiner acknowledges the Hoenninger does not disclose:

means for causing said testing means during execution of said first pattern signal to switch to the execution of a third pattern signal when a second pattern signal transition condition for making a transition to the execution of said third pattern signal holds as a result of the execution of the first pattern signal.

The applicant respectfully disagrees that the combination of Hoenninger and Chapman disclose this recited limitation. A displaying of “nested windows representing the structure of logical and arithmetic related objects” (see Abstract, Chapman) in combination with program steps 32 to 36 of Hoenninger, is not a disclosure of the “means for causing said testing means during execution of said first pattern signal to switch to the execution of a third pattern signal when a second pattern signal transition condition for making a transition to the execution of said third pattern signal holds” as claimed in claim 10.

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Chapman provides no teaching about determining *when to switch from one test signal pattern to another test signal pattern*. Chapman is entirely devoid of any teaching related to detecting or controlling such transitions and thus, one of ordinary skill in the art would not be able to modify Hoenninger as suggested by the Examiner to produce the claimed invention. The structural relationships between the objects that are represented in a way that is visually easy to comprehend as disclosed by Chapman do not explain what to do if a “second pattern signal transition condition” results from the “execution of said first pattern signal.” Chapman does not disclose a structural relationship or configuration in which (1) a first pattern signal transition condition causes a transition to the execution of a second pattern signal and/or (2) a second pattern signal transition condition causes a transition to the execution of a third pattern signal.

The Examiner responded to this argument, which was also presented in response to the Final Office Action (mailed on 12/18/09), by providing two Examples as follows:

Example 1: Hoenninger discloses that once the system is test ready after the first (initial) test pattern signal (described in Col. 3, lines 40-60), second test pattern signals are applied (as described in Col. 3, line 67 to Col. 4, lines 1-15). This second test pattern signal (or set of input signals) however, can be applied in various manners, such as time-independent, time dependent, and etc. By using one of the Chapman's teachings, namely Fig. 4 (where the entity A is embedded with sub-entities B and C), Hoenninger can then better organize and *simultaneously* display the pattern signals testing structure as follows: (**Entity A**): First test-readying pattern signal, (**Sub-entity B**): time-independent signal (second test pattern signal), and (**Sub-entity C**): time-dependent signal (third test pattern signal). As such, first test pattern signal can transition to either second or third pattern signals provided respective transitioning conditions are satisfied).

Example 2: Hoenninger also discloses applying various wave signals, such as square, sawtooth, or triangular, once the test program recognizes a falling edge signal as described in Col. 4, lines 16-35. By using one of the Chapman's teachings, namely Fig. 4 (where the entity A is embedded with sub-entities B and

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C), Hoenninger can then better organize and *simultaneously* display the pattern signals testing structure as follows: (for the sake of the argument, suppose the first test pattern signal is the input signals generated by the signal generator). (**Entity A**): First input pattern signal, (**Sub-entity B**): square wave signal (second test pattern signal), and (**Sub-entity C**): sawtooth wave signal (third test pattern signal). As such, first test pattern signal can transition to either second or third pattern signals provided respective transitioning conditions are satisfied). (underlined emphasis added)

The Examiner's exemplary time independence of the second test pattern signal and the time dependence of the third test pattern signal is not relevant to "*a first pattern signal transition condition*" for making a transition to the execution of said second pattern signal" and "*a second pattern signal transition condition*" for making a transition to the execution of said third pattern signal." The Examiner's Example 1 does not show how Chapman discloses detecting or controlling *a first or second pattern signal transition condition*.

Likewise, the Examiner's exemplary "square wave signal (second test pattern signal)" and "sawtooth wave signal (third test pattern signal)" are not relevant to "*a first pattern signal transition condition*" for making a transition to the execution of said second pattern signal" and "*a second pattern signal transition condition*" for making a transition to the execution of said third pattern signal." The Examiner's Example 2 does not show how Chapman discloses detecting or controlling *a first or second pattern signal transition condition*.

Additionally, Chapman does not disclose "the testing means continues testing the operation of the control unit based on one of the second pattern signal or the third pattern signal" as claimed in claim 10.

Therefore, Hoenninger and Chapman, alone or in combination, do not teach or suggest "means for causing said testing means during execution of a first pattern signal to switch to the execution of a second pattern signal when a first pattern signal transition condition for making a transition to the execution of said second pattern signal holds as a

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result of the execution of the first pattern signal; and means for causing said testing means during execution of said first pattern signal to switch to the execution of a third pattern signal when a second pattern signal transition condition for making a transition to the execution of said third pattern signal holds as a result of the execution of the first pattern signal, wherein the testing means continues testing the operation of the control unit based on one of the second pattern signal or the third pattern signal” as claimed in claim 10.

Claim 20:

Neither Hoenninger nor Chapman discloses:

a step for switching, during execution of said first pattern signal, to the execution of a second pattern signal when a first pattern signal transition condition for making a transition to the execution of said second pattern signal holds as a result of the execution of the first pattern signal;

a step for switching, during execution of said first pattern signal, to the execution of a third pattern signal when a second pattern signal transition condition for making a transition to the execution of said third pattern signal holds as a result of the execution of the first pattern signal; and

a step for continuing testing the operation of the control unit based on one of the second pattern signal or the third pattern signal

as claimed in claim 20.

The same arguments provided above with reference to Claim 10, are applicable to the recited limitations of claim 20. Specifically, “a step for switching, during execution of said first pattern signal, to the execution of a second pattern signal”, “a step for switching, during execution of said first pattern signal, to the execution of a third pattern signal”, and “a step for continuing testing the operation of the control unit based on one of the second pattern signal or the third pattern signal” are not disclosed by either Hoenninger or Chapman.

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For the foregoing reasons, Applicants respectfully request that the rejection of claims 10 and 20 under 35 U.S.C. § 103(a) be withdrawn.

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CONCLUSION

Applicant respectfully submits that claims **10 and 20** are in condition for allowance and notification to that effect is earnestly requested. If necessary, please charge any additional fees or credit overpayments to Deposit Account No. 502432.

If the Examiner has any questions or concerns regarding this application, please contact the undersigned at the telephone number listed below.

Respectfully submitted,

Date: October 7, 2010

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